DISCONTINUED TREND STUDIES UNIT 30 (50A)

DISCUSSION

Trend Study No. 50A-2

***This site was not read in 1998 and has been discontinued. Only text from the 1992 "Utah Big Game Range Trend Studies" report has been included. Consult the 1992 report for maps and data tables.

This study is located immediately west of the town of New Harmony and is typical of the critical deer winter range in this area. Vegetatively, the site is dominated by juniper-pinyon on about a 10% slope with an easterly aspect. Elevation is 5,560 feet. The study site is approximately one-half mile above the deer proof fence surrounding New Harmony and is a known winter concentration area.

Soils are derived from igneous and metamorphic rock. They are shallow, rocky, and alluvially deposited with an apparent hardpan several inches below the surface. Ground cover is poor, but perhaps slightly better than in Lower Broad Hollow. Erosion and soil loss were occurring at an accelerated rate in 1982, but seem to have subsided since the last reading due to an increase in protective ground cover. Basal vegetative cover has doubled since 1982 and bare ground has decreased by 52% (21% to 10%). Even with this increase in basal cover, it is still very low at only 2%. Rock and pavement cover combined have more than doubled indicating past soil loss.

Vegetative overstory is composed of nearly equal amounts of Utah juniper and singleleaf pinyon pine. Combined tree density was estimated using the point quarter method at 324 trees/acre. Fifty percent of the pinyon were classified as seedlings and appear to be on the increase. Eighty percent of the juniper sampled were composed of trees greater than eight feet in height. No seedlings and few young were counted. Understory vegetation is dominated by shrub live oak. Density of oak has declined from 10,332 to 2,499 stems/acre, a 76% decrease. The remaining browse composition includes a number of desirable species, including true mountain mahogany, Utah serviceberry, and desert ceanothus. All are currently in fair to good vigor and moderately hedged, although they are only occasionally abundant and do not appear to be increasing. Utah serviceberry is the second most abundant browse species. It has declined slightly in density since 1982, while percent decadence has increased from zero to 43%. Serviceberry still has a good reproductive potential. Mountain mahogany was not encountered on the density plots during the 1992 reading. Other shrubs of lesser importance and/or desirability which occur on or near the site include; manzanita, pricklypear, and occasional individuals of antelope bitterbrush, Stansbury cliffrose, and Gambel oak. Use of all browse is light to moderate.

Herbaceous understory is badly depleted. Only two perennial grasses were encountered during the 1992 reading. These included mutton grass and bottlebrush squirreltail. Overall, perennial grasses were found in only 20% of the quadrats. Perennial forbs are more numerous but still deficient. They include heartleaf twistflower, Utah deervetch, lobeleaf groundsel, longleaf phlox, and bastard toadflax. Grasses and forbs are currently of little importance. Two annual forbs are of particular note. Annual lupine and a small annual milkvetch (Astragalus sp.) are both very abundant, but likely are of small importance to deer. Other annuals consist of cheatgrass brome, tansy mustard, autumn willoweed, and Microsteris gracilis.

1982 APPARENT TREND ASSESSMENT

Soil condition is poor and declining. Vegetative cover is limited mostly to shrub or tree crowns and litter occurs only under tree or shrub canopies. Erosion has been heavy, leaving much exposed rock. Vegetative trend is stable to declining. With two exceptions, most vegetative parameters are fairly static. An encouraging sign is that 33% of the encountered Utah serviceberry plants were in either the young or seedling age-classes. However, of much greater importance is the apparent expansion of an already dominant shrub

live oak population. This species has an age structure composed of 7% seedlings, 49% young, 42% mature, and only 2% decadent plants.

1992 TREND ASSESSMENT

Basal vegetative cover has increased from 1% to 2%, while bare ground has declined from 21% to 10%, a 52% decrease. Litter has remained basically unchanged. Rock and pavement cover have increased 54%, while cryptogamic cover has declined 71%. Overall, protective ground cover has risen from 80% to 90% since the last reading, but this is mostly from increases in rock and pavement cover. The soil trend has improved slightly since 1982, but the site is still in poor condition. Increased amounts of rock and pavement will help protect the soil from rain drop impact, but they may also negatively impact herbaceous plants and shrub seedlings due to increased soil temperatures. Trend for browse is down. Utah serviceberry has declined slightly since 1982, while percent decadence has increased from zero to 43%. The percent decadency of desert ceanothus has increased from zero to 60%. Shrub live-oak, the most abundant shrub, has shown a 76% decrease in density along with an increase in percent decadency. Some of these changes may be the result of increased density and dominance of pinyon and juniper trees which have increased 50% and 33% respectively since 1982. The herbaceous understory is sparse, but has improved since the last reading. Quadrat frequency for perennial grasses have improved slightly while species diversity has declined. Quadrat frequency and diversity of forbs have improved. Trend for herbaceous understory is up slightly, although still in very poor condition.

TREND ASSESSMENT
soil - up slightly, but in poor condition
browse - down
herbaceous understory - up slightly, but in poor condition